

Application No. 09/517,195

REMARKS/ARGUMENTS

The Examiner's attention to the present application is noted with appreciation.

In paragraphs 4 and 5 of the Office Action dated March 10, 2004, the Examiner rejected claims 1-6, 8-15, and 18-20 under 35 U.S.C. §101 stating that the claimed invention is directed to non-statutory matter. Such rejection is respectfully traversed, particularly as to the claims as amended.

Applicant's invention is a state-of-the-art technique or methodology for providing a more efficient and effective gathering of data based on displaying viewer reactions to elements of a display object and visually displaying viewer responses as a divided display object with at least one characteristic based on those reactions, using a computer or other processor. The resultant display object, divided into spatial regions having at least one characteristic, allows the decision makers to evaluate the information. The technological advance is in the ability to efficiently collect information from the viewer responses to the elements of a display object and present that information in a highly usable form, in order for decision makers to evaluate the display object. Without the method and apparatus of the present invention it would be very difficult if not impossible to collect these viewer responses in such detail and easily evaluate the information based on viewer's memory; thus the present invention is novel, unique and a technological advance. We wish to note that Applicant, dba Ameritest, has won the prestigious Grand Ogilvy Research Award numerous times and is published in the Journal of Advertising Research (please see attached Journal of Advertising Research Article, and press release citing the Ogilvy Award). Further, Applicant has received millions of dollars in revenue for use of its methods. These are only a few testaments to the advance in technological arts achieved by Applicant's invention.

In paragraphs 6, 7 and 8 of the Office Action, the Examiner rejected claims 1, 10, 11, and 20 under 35 U.S.C. §112 for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims have been amended to more clearly describe the method and apparatus of the present invention. Therefore, these rejections are respectfully traversed.

In paragraphs 9 and 10 of the Office Action, the Examiner rejected claims 1-6, 8-15 and 18-20 under 35 U.S.C. §103(a) as being unpatentable over Buxton et al. (U.S. Patent No. 6,118,427). Such rejections are traversed, particularly as to the claims as amended. The prior claims have been canceled and new claims 21 through 57 have been added to describe the invention. Concerning claims 21 through

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39, the method claims, Applicant's invention is directed to a method for displaying an display object, collecting viewer reactions to elements of the display object, correlating these reactions to spatial regions of the display object, dividing the display of the display object into these spatial regions, and modifying at least one characteristic, for example color or transparency, of each region based on the viewers' reactions, for the purposes of a decision maker's evaluation of the display object.

Concerning claims 40 through 57, the apparatus claims, Applicant's invention is directed to an apparatus for measuring viewer response to a display object which comprises a display for displaying an undivided display object, a data collector for receiving responses regarding the elements of the display object after the viewers have viewed the display object, a processor for correlating the responses to a plurality of spatial regions of the display object and assigning at least one characteristic to each spatial region based on the responses, and a display for displaying to decision makers the display object divided into the spatial regions having the assigned characteristic.

The purpose of Buxton et al. is for the viewer to evaluate a grid and/or icons which are superimposed on an object in order to determine the preference of the viewer for a given grid characteristic or icon. That is, Buxton et al.'s purpose is to evaluate the combination of an overlay and an object. In contrast, the purpose of the present invention is for decision makers to evaluate the display object by displaying it to viewers *without any grid or overlay*. The grid is strictly for the purpose of displaying the viewer responses to decision makers in an intuitive manner. The display object will not be divided into spatial regions when it is eventually viewed by the public; thus it is important that the viewers of the present invention do not view the divided display object. Similarly, the purpose of the present invention is not for the decision makers to evaluate the *divided* display object; rather, it is for them to evaluate the success of the original, undivided display object at eliciting desired effects in the viewer. The characteristics of the different spatial regions of the display object are used by the decision makers as a tool for the evaluation.

Further, the device of Buxton et al. is designed so that the viewer, who is responding to the grid, icons, and shadings, makes real-time decisions based on which icon, part of the grid, or shading is most user-friendly for the user interface. Thus in Buxton et al. it is essential to the device that the viewer views the grids, icons, and/or shadings. However, as recited in the amended claims of the present invention,

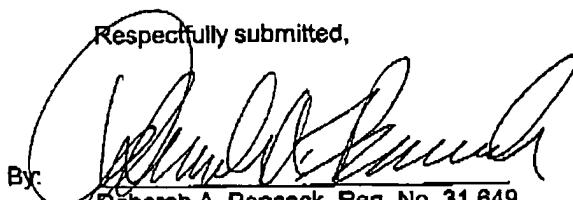
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viewer responses or reactions are not recorded until after the display object, without any grids, is displayed to the viewers. Thus the viewer responses are based on each viewer's memory of the undivided display object. Therefore, Buxton et al. teach away from the viewing of an undivided display object, as well as eliciting viewer responses after having viewed the display object. The present claims, as amended, are therefore patentable over Buxton et al.

In view of the above amendments and remarks, it is respectfully submitted that all grounds of rejection and objection have been avoided and/or traversed. It is believed that the case is now in condition for allowance and same is respectfully requested.

If any issues remain, or if the Examiner believes that prosecution of this application might be expedited by discussion of the issues, the Examiner is cordially invited to telephone the undersigned attorney for Applicant at the telephone number listed below.

A check for additional claim fees is attached. Also being filed herewith is a Petition for Extension of Time to July 12, 2004, which is the first business day after July 10, 2004, with the appropriate fee. Authorization is given to charge payment of any additional fees required, or credit any overpayment, to Deposit Acct. 13-4213. A duplicate of this paper is enclosed for accounting purposes.

Respectfully submitted,  
  
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**Ameritest: About Ameritest: In the News**

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This issue summarizes our recent findings on the similarities and differences between different pre-testing approaches to measure how well branded a commercial is. It also provides some practical tips on how to have a successful research meeting with your advertising team. If any of you would like the full articles on these subjects our would like to arrange a webex presentation/discussion on the topic, please give us a call.

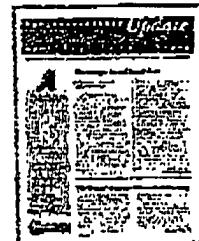
As always we welcome your feedback, opinions and insights as well as any suggestions for topics of interest for future issues.

We hope you enjoy this issue!

Chuck Young  
President, Ameritest/CY Research  
(download PDF)

**Ameritest Update Newsletter, No. 2**  
October, 2003

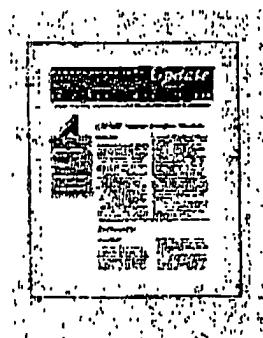
Welcome to the second installment of the Ameritest Update newsletter. This issue takes on day-after recall, explores the world of music in TV advertising and offers lessons for effective print ads.



Chuck Young  
President, Ameritest/CY Research  
(download PDF)

**Ameritest Update Newsletter, No. 1**  
Chuck Young, President, Ameritest/CY Research  
Spring 2003

The very first issue of our newsletter.  
(download PDF)



**Ameritest shares the 2003 Grand Ogilvy Research Award with IBM, along with first-in-category win!**

At this year's ARF conference in April research industry

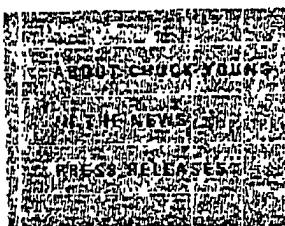


## Ameritest: About Ameritest: In the News

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leaders acknowledged IBM's highly successful effort at using advertising research to help sear into the minds of business executives the critical importance of being prepared with "e-business Infrastructure" solutions, awarding IBM the grand prize as well as first place in the Considered Purchases category. As the firm providing IBM with television advertising research, Ameritest functioned as a partner in a truly integrated research/strategy loop that resulted in a consistent focus on campaign objectives—and a continuing refinement of the ways to meet them. Far from a research silo drawn upon selectively for grains of wisdom, research functioned as a catalyst in the shifting ecology of the campaign. Ameritest is proud to be a part of their client's continuing advertising success!

'Ameritest: About Ameritest



## ABOUT AMERITEST

Ads are a constant part of our daily experience.

Ameritest® studies these ads to discern which ones work, which ones don't, and which are close—and why. We provide research feedback on hundreds of television commercials and print ads to some of the world's largest advertisers.



Six time-winner  
David Davy  
Research Award

Ninety percent of Ameritest's clients are household names—the bluest of blue chip companies. We analyze ads for two of the three largest high-tech companies. Ameritest is also the primary testing service for one of the world's three largest packaged goods companies.

Ameritest has created a fresh database consisting of thousands of tested ads. We have normative experience in a wide range of brand categories, including agri-business, automotive financial services, food and beverages, household and personal care products, high tech business-to-business products, telecom and retail.

Our research products combine a rigorous mastery of established practices with a variety of innovative, proprietary techniques that have been refined through nearly 20 years of testing and development. Our patented Picture Sorts® methods, Ameritest advertising models, and online testing protocols are examples of research breakthroughs— inventions that we have recently begun to license on a limited basis, extending our service network for the benefit of our clients.

Our rapidly growing list of clients knows that the Ameritest learning system is the pinnacle of advertising research.

Today, our focus is on delivering a definitive Total Research Experience to each of our clients. This means:

- Accurate and timely information

Ameritest: About Ameritest

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- Provided within an intuitive and validated theoretical model
- Accompanied by insightful analysis and ad team discussion led by knowledgeable research professionals.

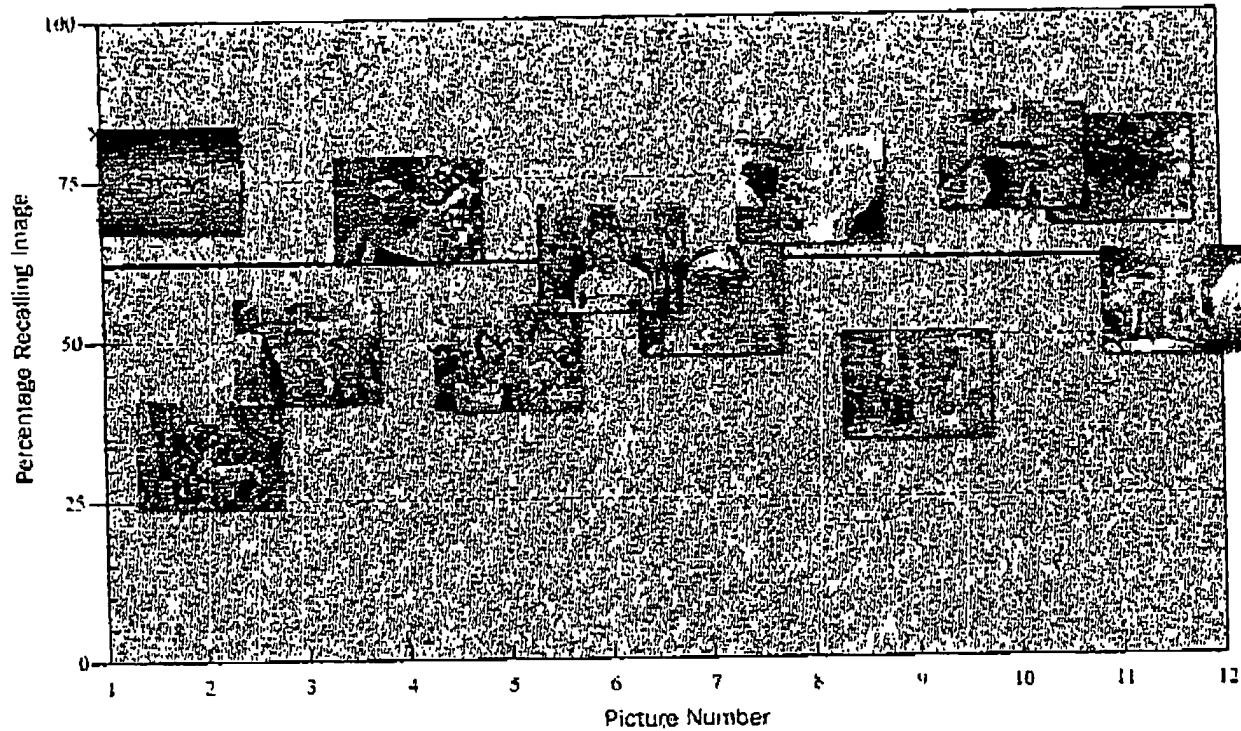
Ameritest's research consultants move gracefully between the worlds of scientific research and advertising arts. They season your creative development process with real world discipline. Ameritest methods and professional expertise deliver insights you can measure.

# JOURNAL OF ADVERTISING RESEARCH

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## Ameritest Flow of Attention® Graph

### Special Issue: DIFFERENT VIEWS AND NEW APPROACHES

**Brand Advertising as Publicity**

**The Importance of Being Ernest [Dichter]**

**Leveraging Customer Information — A Case Study  
of Charitable-Giving Behavior**

**Brain Waves, Picture Sorts®, and Branding Moments**

**Magazine Selection of Brand Message Absorption**

**Adstock and Media Scheduling**

**Are You Old School?**

## Brain Waves, Picture Sorts®, and Branding Moments

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This paper describes a method to identify potential branding moments in television commercials. It involves the convergence between two fundamentally different nonverbal moment-by-moment measurement techniques. The first is a picture-sorting technique. The second is brain-wave measurement. At the intersection of the two can be found special moments where the personalized meaning of the esthetic experience of an advertisement appears to flow into the positioning concept of a brand.

THE MIND OF THE CONSUMER can be thought of as being continuously engaged in the process of *defining* the self and *orienting* it with respect to the outside world. A brand's image is constructed in relationship to the consumer's concept of *self*. A brand's positioning is determined with reference to the marketing *universe* of competitors. But, it is the dramatic tension between the inner-directed process of brand image building and the outer-directed process of positioning a product in the marketplace that energizes the yin-yang of advertising creative as it is received by the mind of the consumer.

Many advertising professionals appear to use the terms "brand image" (Ogilvy, 1983) and "brand positioning" (Reis and Trout, 1981) interchangeably, or think of one as a subset of the other. However, our experimental data and current models of memory and information theory instead support the notion that they are, in fact, two quite different dimensions of advertising communication—dimensions that can be measured separately.

Advertising researchers who use moment-by-moment approaches to studying television commercials quickly learn that the "80/20 rule" of marketing applies to advertising executions as well as it does to other marketing phenomenon. A small percentage of "peak" moments in a TV commercial do much of the "work" in driving traditional advertising performance measures. (To use day-after recall as an example, see Young and Robinson, 1989.) The results reported below lead us to

hypothesize the following: that within effective, brand-building television commercials there are special *branding moments* that occur at the *boundaries* between the inner-directed and outer-directed information content of an advertisement. Branding moments in effective television commercials forge a *link* between brand image and product positioning. As such, these moments may be critical for understanding the long-term contribution a television commercial will make to brand equity.

This paper describes a method to identify potential branding moments in television commercials. It involves the convergence between two fundamentally different nonverbal moment-by-moment measurement techniques. The first is a picture-sorting technique. The second is brain-wave measurement. At the intersection of the two can be found special moments where the personalized meaning of the esthetic experience of an advertisement appears to flow into the positioning concept of a brand.

### LITERATURE REVIEW

The use of electroencephalogram (EEG) measurements to describe the electrical activity of the brain while a viewer watches television was first described by Krugman (1971). Subsequently, a number of researchers followed up on this work, including Olson and Ray (1983), Rothschild (1988), and Alwitt (1989). A particular focus of attention in the past has been on hemispheric variations in

## BRANDING MOMENTS

how the right brain processes information differently than the left brain. This is taken from Diamond and Beaumont (1973), which was reviewed by Krugman (1980). Differences in brain activity as a function of the type of wave measured, for example, alpha waves versus beta waves, have been commented on by Olson (1989). Over a decade ago Rothschild et al. (1989) suggested the need for research with more precise brain-wave measurements correlating to individual scenes or claims in the commercial.

The Ameritest Picture Sorts® method for measuring consumer recall of individual images in a commercial was described by Young and Robinson (1987). Later they showed the relationship between the Flow of Attention® generated by this method and the recall (1989) and persuasiveness measures (1992) produced by Research Systems Corporation, a leading copytesting system. Young and Robinson (1991) also used their method to show that the semantic and esthetic information content of advertising, and how it is processed by consumers, varies as a function of the life stage of a brand. From an information theory standpoint, new-product advertising is fundamentally different from advertising for established brands.

More recently, Braithwaite and Swindells (1995) and Heath (1999) took the research on brain activity associated with the processing of advertising a step further to a discussion of how differences in processing might affect how brands are constructed in the mind.

**THE EXPERIMENT****The commercials**

The advertising used in this study consisted of eight television commercials, two from each of four packaged-goods brands in the personal-care product category. Each pair consisted of one strong and one

weak commercial for the brand, defined in terms of statistically significant differences for either the attention-getting power of the advertisement (in a cluttered environment), the motivation power of the advertisement (weighted purchase intent), or both. Thus, the sample of advertisements, while restricted to one product category, was taken as representing a meaningful range of television advertising experience in terms of important measures of advertising performance.

**Picture sorts\***

In the Ameritest commercial pre-test system, each advertisement was tested independently among a sample of 125 consumers drawn from female heads of household aged 18 to 54, recruited by mail intercept, with demographic quotas balanced to census. Therefore, for the eight advertisements in this study, 1,000 interviews were collected. Each advertisement was shown in a controlled viewing situation with a personal interview lasting approximately 25 minutes. The interview consisted of open-ended and closed-ended questions, with the Picture Sorts® data being collected during the last five minutes of the interview. In this diagnostic portion of the interview, respondents were given a shuffled deck of photo images (typically from 10 to 30 photo images) taken from the commercial itself. The number of pictures is determined by the visual complexity of the advertising and not by a mechanical rule. The procedure is to take as many pictures as necessary to describe the visual information content of the advertising.

The deck of pictures forms a *natural vocabulary*, based on the commercial iconography itself, for the respondents to use in reconstructing the visual experience they had of the advertising. To construct the Flow of Attention®, respondents are asked to sort images into two piles: the images

they remember seeing in the advertisement and the ones they do not. The results of this sort are displayed in the "graphical user interface" shown in Exhibit 1. The pictures are shown in the order they actually appear in the advertising and the height of each picture, measured from the top of the picture, represents the percentage of respondents who remember seeing that image in the commercial. On average, respondents remember approximately two out of three images in a typical commercial (see Young and Robinson, 1989).

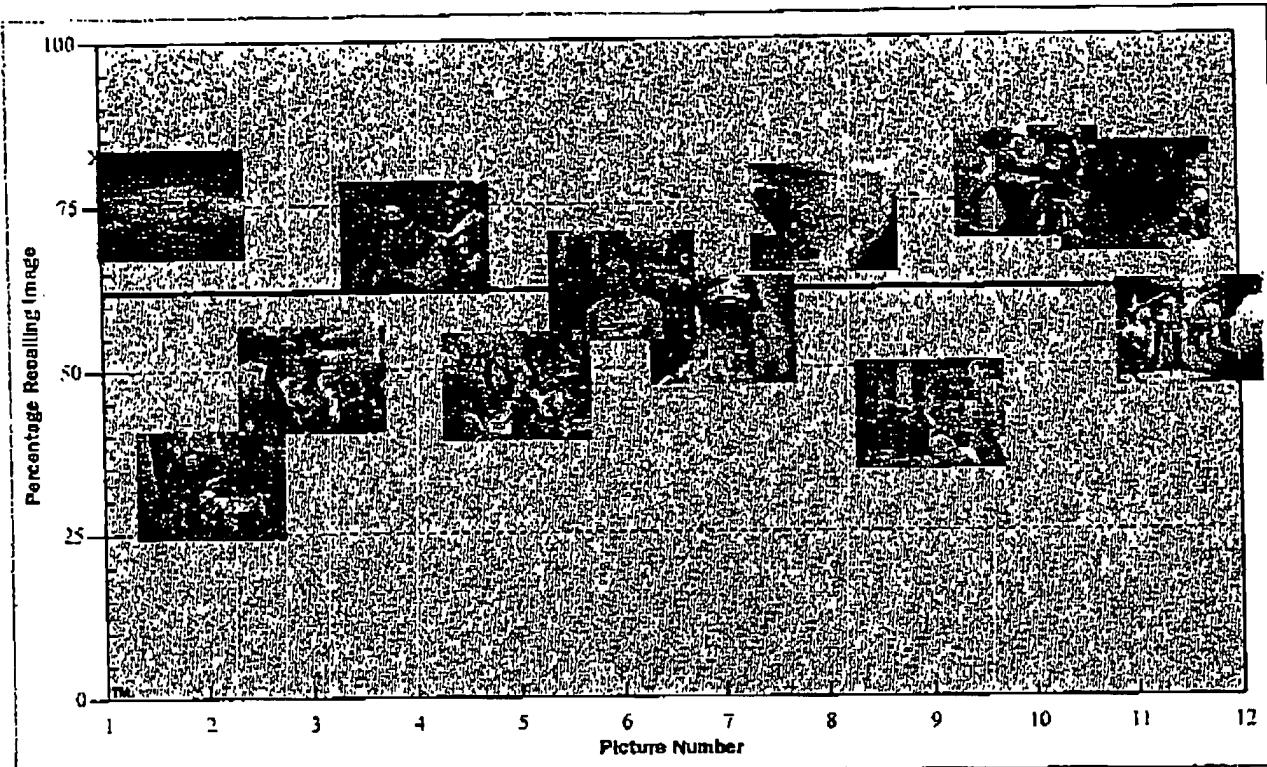
**Brain waves**

These same eight advertisements were retested with a brain-waves measurement system among a sample of 100 women with demographic characteristics similar to the respondents used in the original Ameritests. A proprietary, noninvasive "dry" headset was used to measure the electrical activity of the brain while respondents watched these television commercials. The EEG activity is measured across four commonly accepted frequency bands: delta (< 4 Hz), theta (4-8 Hz), alpha (8-12 Hz), and beta (10-30 Hz). Since past research has shown that beta waves are directly related to alertness, focus, and task engagement, while alpha and theta are inversely related, these measurements were combined into a single measure, the Engagement Index™, (EI), which is calculated  $EI = \beta_4 - (\alpha + \theta)$  [see Pope et al., 1995; Freeman et al., 1999]. Measurements are taken every 0.2 seconds.

**Comparing two nonverbal measures**

To compare the response functions produced by these two nonverbal measurement systems, it was necessary to take a subset of the brain-wave measurements that coincided with the images that were used in the Ameritest Picture Sort®. When a particular image was on the television screen for a period of time that extended

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**Exhibit 1** Example of an Ameritest Flow of Attention® Graph (1st half of advertising)

across several brain-wave measurements, an average of the brain-wave measurements was used. The synchronized measures of the two time series resulted in a total of 201 moments for analysis across the eight commercials.

In addition, the two response functions were normalized by indexing them to the average level for the respective measures within each advertisement, with the average set equal to 100 for both the Flow of Attention® and the Engagement Index.

#### FINDINGS

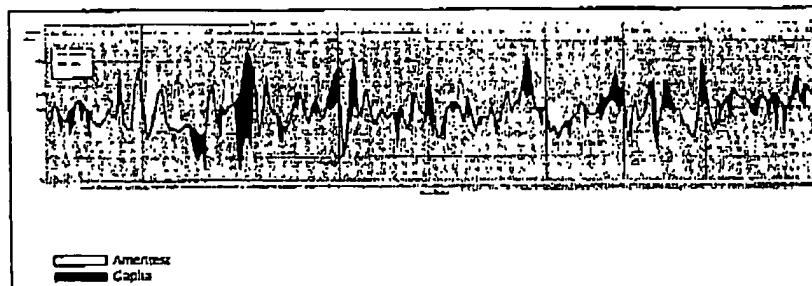
The synchronized graphs of the two response functions for the eight commercials laid end to end (for illustration purposes only) are shown in Exhibit 2, with the different colored areas highlighting the peaks and valleys of the Picture Sorts®

function and the brain waves Engagement Index function. Visual inspection reveals that the two response functions are quite different. Indeed, statistical analysis reveals that the two functions are, in fact, totally uncorrelated. A regression model built to predict the Picture Sorts® response

function with data from the brain-wave response function produces an r-squared value of only .009.

Several initial explanations for the failure to find a correlation between the two data sets were explored and rejected.

One possible explanation for the lack of



**Exhibit 2** Brain Waves and Picture Sorts® across Eight Test Advertisements

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correlation is that there might be some kind of time delay between the two measures. However, use of lagged variables in the regression modeling of the time-series data did not improve the fit between the two. This result makes sense given that there is no significant reaction-time bias in either measurement approach. The brain-wave measurement is made in *real time* while the respondent watches the commercial and, unlike other moment-by-moment approaches, does not suffer from the confounding variable of respondent brain-hand reaction time. The Picture Sorts® data, an after-the-fact self-reported reconstruction of the advertising experience rather than a mechanical measurement, also contain no reaction-time variable that could time-shift the response function.

A second explanation for the lack of correlation is that the Picture Sorts® data only represent how viewers process the visual information content of the commercial while the brain-wave measurements represent the total information processing of the commercial—visuals plus copy plus music. While this would lead us to expect only a partial correlation between the two measurement approaches at best, this does not explain the *total lack of correlation* between the Picture Sorts® and brain waves measurements.

A third explanation of why the two response functions are so different can be based on the fact that brain-wave measurements are made while the respondent is watching the commercial, whereas Picture Sorts® measurements are made up to 20 minutes after viewing the advertising. Consequently, the Picture Sorts®, in some sense, represents information that has been more *deeply processed* than that measured by the brain wave EEC. Pursuing this line of reasoning, we conjectured that the response function of the Picture Sorts®, representing information that has

been filtered through the mind for a period of time, might be less volatile than the brain-wave function. In other words, there might be a sharpening or focusing effect as a result of the additional processing resulting in fewer peaks and valleys in the Picture Sorts® “wave” function than in the brain waves. To explore this hypothesis, we examined the volatility of the two data sets.

We define a “peak” moment in either the brain wave or the Picture Sorts® data sets as one that scores 115 or higher on the index, i.e., at least 15 percent above the commercial average. Similarly, a “valley” is a moment that scores 85 or lower on the index, i.e., at least 15 percent lower than the average. Table 1 shows the results of this analysis.

The two response functions are equally volatile—they contain the same number of peaks and valleys. Slightly more than one out of four of the moments in the advertisements are peak moments according to this definition and slightly fewer than one out of four are valleys. But, importantly, fewer than 10 percent of the moments in these eight commercials are simultaneously peak moments for both

brain-wave arousal and Picture Sorts® memorability.

A sensitivity analysis of the cut-off points used to define them (e.g., 120 instead of 115) confirmed that peak moments for brain waves and Picture Sorts® are different moments. These two nonverbal measurement approaches appear to be measuring fundamentally different things in the experience of television commercials, and both approaches appear to be important.

A content analysis of these moments, as shown in the Dove deodorant example in Exhibit 3, suggests that both types of moments are essential to the effectiveness of the advertising. In this example, peak Picture Sorts® moments include two scenes when a woman and man hug each other on-screen. The hug image is a key visual for the Dove brand because (a) it says that with this deodorant you can get close to another person (the social benefit of using the deodorant category), and (b) the hug dramatizes the brand-differentiating idea that Dove is the one deodorant that is *soft* on your skin. In contrast, brain-wave activity peaks more often in the second half of the advertising on product visuals,

**TABLE 1**  
Picture Sorts® and Brain Waves: Peaks and Valleys

	(Base: 201 moments)	%
<b>Peaks (115 index)</b>		
Picture Sorts®	29	
Brain waves	27	
Both	④	
<b>Valleys (85 Index)</b>		
Picture Sorts®	22	
Brain waves	23	
Both	⑤	
► The two methods are measuring two different things!		

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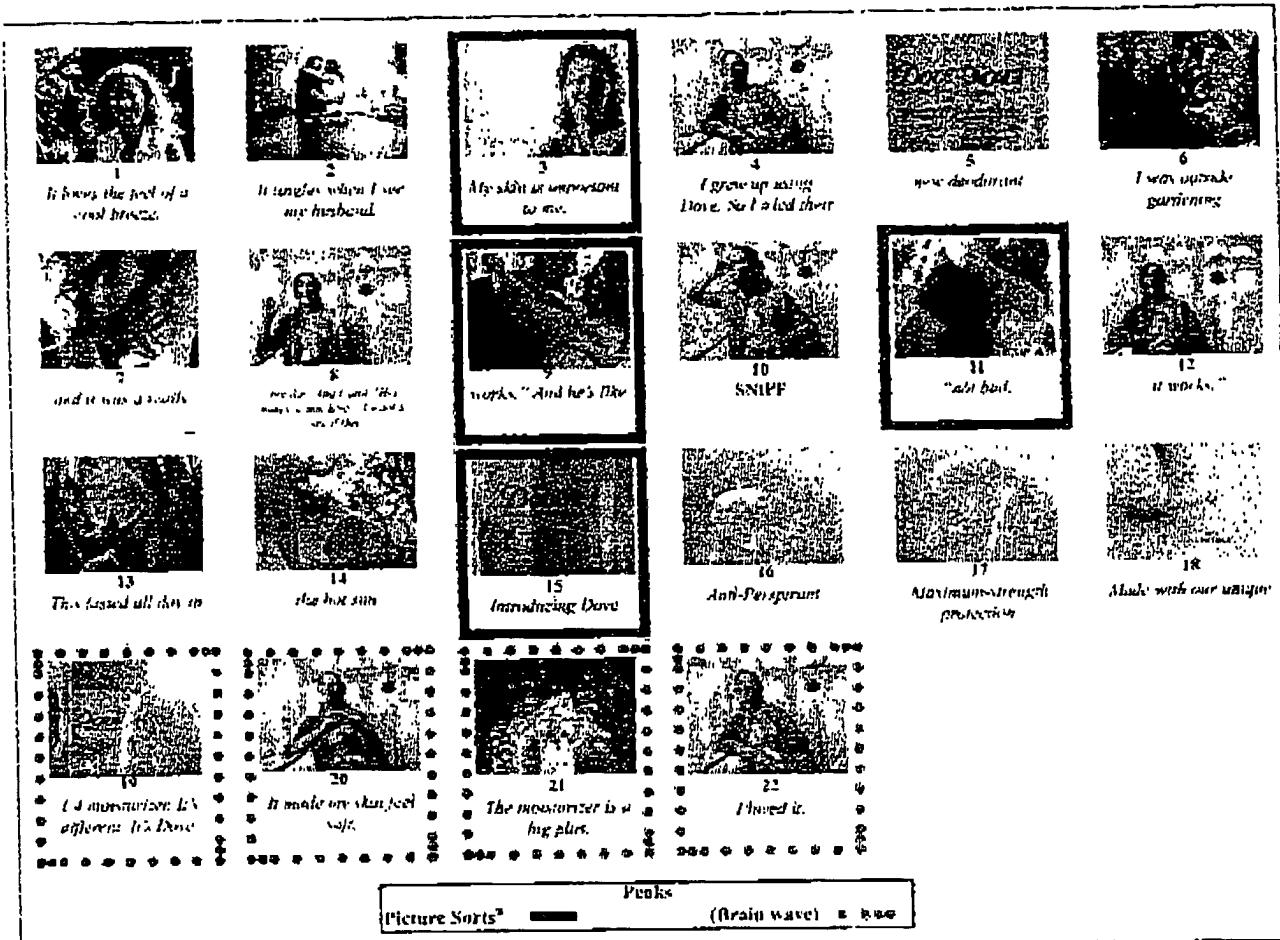


Exhibit 3 Dove "Gardener"

when the new product is introduced and on moments where strategic information is conveyed, such as the fact that this deodorant "contains 1/4 moisturizer."

**SEMANTIC VS. ESTHETIC INFORMATION**  
Information theorists such as Moles (1968) suggest the existence of two types of information that are present in all messages. The first type of information is *semantic* information; it is logical, structured, and translatable into a foreign language or from one channel of communication to another. Importantly, from a behaviorist conception, it serves to prepare actions in

the world, e.g., purchase behavior. From an advertising standpoint this may be thought of as the *strategic message content* in an advertisement.

The second type of information is *esthetic* information. It is specific to the channel that transmits it and is profoundly changed by being transferred from one channel to another. This is the information in a picture that cannot be translated into words; it is the information in a piece of music that cannot be described with verbatim playback; it is the poetry of language. Indeed, one of the main reasons that Picture Sorts<sup>2</sup> were de-

veloped was to create visual "vocabularies" to probe the esthetic component of advertising. Esthetic information, which pertains to emotions, might be thought of philosophically as personal information that shapes internal states of mind. From an advertising standpoint, it is the *execution* that makes the communication a creative act.

Visual inspection of the peak brain wave and Picture Sorts<sup>2</sup> moments across the eight advertisements suggests that the differences in what these two nonverbal approaches are measuring could be related to the dominant type of information

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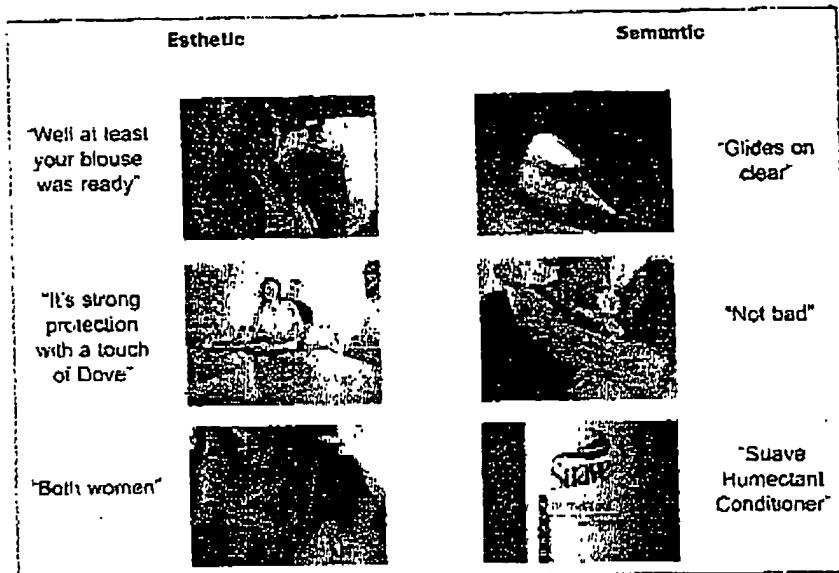


Exhibit 4 Examples of Information Types

present in each moment. To explore this hypothesis, two independent market research data coders (who had not seen the measurement data) were employed to code the information content in these moments.

The type of information present in each of the 200 commercial moments was coded as follows. The moment was classified as semantic if the visual or associated

audio contained strategic information such as a product claim or support point, e.g., contains 1% moisturizer—or a package shot, product demo, etc. Otherwise, by default, the moment was classified as esthetic. Examples of the results of the coding are shown in Exhibit 4. In general, the two coders agreed on classification over 90 percent of the time and discussion between them was used to resolve the few

differences in classification that remained.

Across all 200 moments in these advertisements, 80 percent of the visuals were classified as having primarily esthetic content, while 20 percent contained semantic information (see Table 2). In contrast, only about 60 percent of the audio contained only esthetic content—dialogue—while roughly 40 percent contained semantic content. In other words, semantic information was being delivered disproportionately by the audio channel.

Looking at the brain-wave analysis, it is apparent that peak moments of brain arousal are relatively more likely ( $p < .05$ ) to be identified with semantic information content. In fact, over half the peak brain-wave moments contain semantic information. In contrast, the visuals in these commercials are dominated by esthetic content and the peak moments mirror this dominance. However, looking at the audio content synchronized with the peak Picture Sorts<sup>a</sup> moments, it is apparent that peak moments are relatively less likely to contain semantic content ( $p < .05$ ) and are more likely to be moments of *pure* esthetic content.

While these differences represent tendencies rather than dichotomies, it can be said that brain-wave arousal is associated

**TABLE 2**  
Information Content

	Total Information Content of All Moments			Brain Waves		Ameritest Picture Sorts <sup>b</sup>	
	A		B	C	Visual or Audio Content	E	Visual
	Visual	Audio	(201)	Visual or Audio	Peak Moments	(58)	Associated Audio
	(201)	(201)		(201)	(55)		(58)
	%	%		%	%	%	%
Semantic	20	39 <sup>ASC</sup>		41 <sup>ASC</sup>	56 <sup>ASCP</sup>	19	24
esthetic	80 <sup>ASC</sup>	61 <sup>D</sup>		59 <sup>C</sup>	44	81 <sup>ASD</sup>	76 <sup>ASD</sup>

<sup>a</sup>ASA: DUL/II  
<sup>b</sup>Digital tester = 47% Commodity based

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## A theory of how advertising works in the mind is inescapably linked to a theory of memory.

with the *thinking* part of the communication, i.e., where information is being learned. The peak Picture Sorts<sup>®</sup> moments then tend to be associated with the *feeling* part of the advertising where some emotion or sensation is being experienced.

This interpretation is consistent with several previous research studies. Zielske (1982) showed that day-after-recall tests penalize emotional advertising, i.e., recall tests underrepresent the impact of emotional, esthetic content. Young and Robinson (1989) showed that recall test scores are driven by focusing peak moments in an advertisement on semantic information content. Moreover, Young and Robinson (1991) also demonstrated that a principle characteristic of new-product commercials, as opposed to established brand advertising, is that new-product advertisements are more likely to contain (and viewers are more likely to process) semantic information. In other words, the job of a new-product commercial is to "teach" the consumers about the new product—why it exists and how it fits into their world. Consistent with this, the relationship between recall tests, which posit a learning model of advertising effectiveness, and in-market measures of effectiveness such as brand awareness or brand salience is much more clearly established in the literature for new-product advertising than it is for established brand advertising (Lodish et al., 1995).

### SEMANTIC VS. EPISODIC MEMORY

A theory of how advertising works in the mind is inescapably linked to a theory of memory. There exists a well-established literature about memory that parallels the construction begun above. E. Tulving

(1983, 2000), a leading figure in modern memory research, describes current theories about the existence of two fundamentally different memory systems that operate in the mind. (There is also a third system, procedural memory, which is not germane to the discussion here but may be important for retail research.) Both systems are important for understanding the mental processes that allow advertising to work and the two dovetail neatly with the two types of information being discussed. The first is the *episodic* memory system and the second is the *semantic* memory system. Table 3 summarizes key differences between the two memory systems.

The most important difference is the frame of reference given for the two systems. For the episodic system, the frame of reference is the *self*—the internal "I" of the consumer. For the semantic system the

frame of reference is the *universe "outside"*—from a marketing standpoint, the competition. When they think of memory, most people tend to think of it in the first, personalized sense, as described by William James (1890):

Memory requires more than mere dating of a fact in the past. It must be dated in my past. In other words, I must think that I directly experienced its occurrence. It must have that "warmth and intimacy" which were so often spoken of in the chapter on the Self, as characterizing all experiences "appropriated" by the thinker as his own.

In contrast, memorization of objective or impersonal "factual information," e.g., the multiplication tables, is input to the semantic memory system.

According to Tulving (1983), the source of information for the episodic system is *sensation*. For example, the tactile sensation evoked by watching a woman touch

**TABLE 3**  
Summary of Differences between Episodic and Semantic Memory

Diagnostic Feature	Episodic	Semantic
• Reference	<u>Self</u>	<u>Universe (Competitive Set)</u>
• Information		
• Source	<u>Sensation</u>	<u>Comprehension</u>
• Units	<u>Events, episodes</u>	<u>Facts, ideas, concepts</u>
• Organization	<u>Temporal</u>	<u>Conceptual</u>
• Operation		
• Registration	<u>Experiential</u>	<u>Symbolic</u>
• Context dependency	<u>More pronounced</u>	<u>Less pronounced</u>
• Affect (Emotion)	<u>More important</u>	<u>Less important</u>
• Retrieval queries	<u>Time? Place?</u>	<u>What?</u>
• Recollective experience	<u>Remembered past</u>	<u>Actualized knowledge</u>
• Retrieval report	<u>Remember</u>	<u>Know</u>

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her hair frequently occurs as a peak Picture Sorts<sup>a</sup> moment in many hair-care commercials and would be an instance of the kind of sensory "experience" that is input to the episodic system. On the other hand, for information to be stored in semantic memory it needs to be in the form of concepts that "must be understood and comprehended, that is, related to existing knowledge" (Tulving, 1983).

The basic units of information for the semantic system are facts or settling propositions. In contrast, the basic units of information for the episodic system are events or episodes. Tulving's description of an event (1983) could easily include many television commercials:

An event is something that occurs in a particular situation. It has always a beginning and an end in time, and the interval between the two temporal boundaries is filled with some activity, frequently but not always by one or more "actors." Events recorded in the episodic system always involve the rememberer, either as one of the actors or as an observer of the event.

Because the episodic system is organized by time, dramatic narrative structure or storytelling is more important for this system. From a visual narrative standpoint, the peak moments in a Flow of Attention<sup>b</sup> graph are typically the dramatic highlights of a commercial storyline—much like the best-remembered scenes of a favorite movie.

While language plays a more important role in the semantic system, the episodic system is fed by experience. Indeed, it could be argued that the purpose of showing scenes of a product or products being consumed or used in television commercials is to create a form of *virtual consumption experience* for the brand. When fed into the episodic memory system, these might become indistinguishable from real

## **Media program environment may play more of a role in influencing how advertising works with the episodic system than it does with the semantic system.**

experiences of the individual—much like the phenomena of "false memories" of childhood that some psychologists have reportedly been able to create. In our database, these moments of virtual consumption also frequently occur at peak Picture Sorts<sup>a</sup> moments in food and beverage advertising.

Generally, it is thought that the episodic system is more context-dependent than the semantic system in which knowledge is de-contextualized. Moreover, affect is considered more important for the episodic system and less important for the semantic system. From an advertising research perspective, these differences may have important implications for understanding media. Media program environment may play more of a role in influencing how advertising works with the episodic system than it does with the semantic system.

The retrieval questions used to access the two systems are also quite different. Information from the semantic system is accessed with questions such as "What brand of deodorant contains % moisture?" Information from the episodic system may require more projective-type probing of time and place, employing questions of "When?" and "Where?" as might be used in a qualitative focus group setting to evoke brand imagery. Indeed, the concept of *place* plays a central role in methods of training memory and is an important, if not very well understood, concept for branding, as in "Marlboro Country."

Finally, for advertisers, one of the most significant observations about the differ-

ences between the two memory systems commented on by Tulving and echoing the words of James is that "Remembered past events somehow *belong* (italics mine) to the rememberer." Indeed, one way to define a "brand" is that it is a product that is, in some emotional sense, *owned* by the consumer. Whereas using advertising to convey information to the semantic system is important for informing the consumer about the difference between the advertised product and competing alternatives, it appears that the episodic system is central to the mental process by which a product is turned into a brand, which is essential in creating brand loyalty.

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One of the challenges facing students of advertising is understanding the processes by which brands grow in the mind of the consumer. A useful metaphor for our model is to think of the growth ring of a tree.

It is a general operating principle for scientists working with the emerging mathematical science of complexity theory that the most interesting things—indeed, life itself—happen at the edges of complex dynamic systems, at the boundary between order and randomness. A leading figure in this area, Stuart Kauffman (2000) has described a construct called the "adjacent possible"—a future one-step removed from the present—for illuminating the growth and evolution for biological systems.

In the realm of psychology, Mihalyi Czikszentmihalyi (1990) has described the

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"flow" state as a mechanism for explaining the growth of the self. Simply put, the flow state occurs at the edge of human experience when you are pushing yourself to perform your personal best, balancing the limits of your skill set against the difficulty of a challenging task you have set yourself. According to Csikszentmihalyi, each time you move toward the edge to enter the flow state of mind for a time, you add a new growth ring for the self.

In the realm of social science, Goffman (1963) has described the high drama which frequently takes place when one crosses social boundaries, such as in a movement from a "backstage" to a "front-stage" social situation. An insightful student of media, Joshua Meyrowitz (1985) used Goffman's theoretical framework to describe how the movement of perceptual boundaries caused by new media has had major impact on human behavior.

As a continuation of this line of thought,

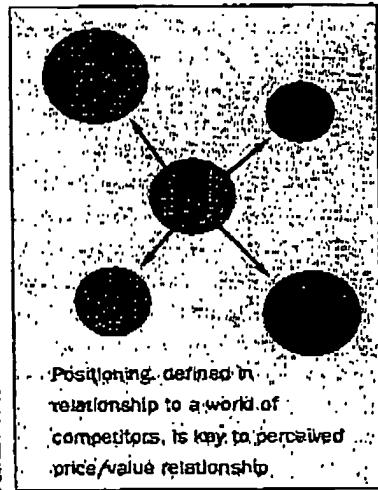
it is useful to consider how the concept of boundaries can be used to understand how advertising can grow a brand. It is an old business rule learned by experienced creatives that in selling a client a new advertising campaign, one should bring three creative concepts. The first concept is the one that is "too safe," the one the client asked for; the second concept is "too risky," the far-out execution the creative would really like to do but the client will be too risk-adverse to buy; and in Goldilocks fashion, the third concept is "just right," a fresh idea that is close enough to where the brand has been to be saleable. The logic of this third idea is that it is "edgy" enough to bring the brand a new idea or feeling but "close enough" in to still make a connection with the roots of the brand. In short, to add another experiential "growth ring" to a brand, one must find ideas close to the boundaries between what the brand owns in the mind

of the consumer and what the brand does not own. Growth occurs at the balance point between the past and future, with a focus not on *being* but on *becoming*.

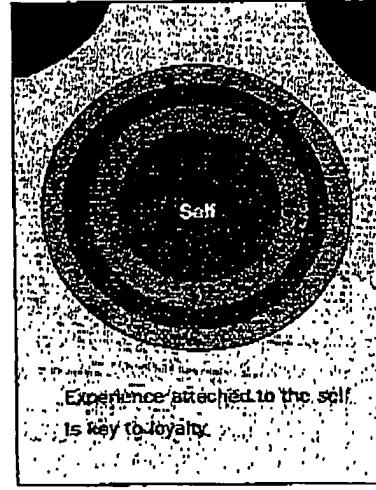
If we zoom in on this concept further, we need to ask ourselves what content characterizes this third category of creating concepts—advertisements that can add "growth rings" to brands? Our hypothesis is shown in Exhibit 5. We suggest that there are special branding moments, which occur in effective, brand-building advertising. Branding moments occur at the boundary between outer-directed semantic information, which defines a brand's positioning in the world, and inner-directed esthetic information, where experience created by the advertising is attached to the self. Branding moments are where the mind meets the marketplace. Branding moments in an advertisement are those special, ownable moments when a brand's positioning is expressed in a fresh

**a) Strategic Positioning:**

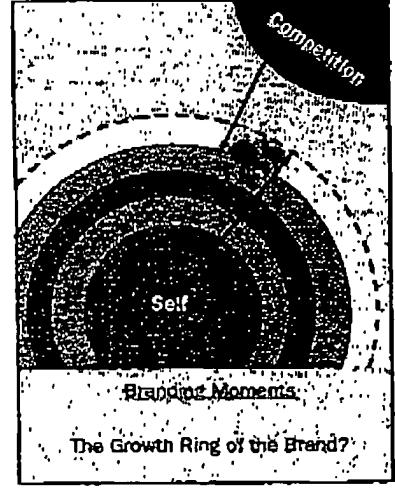
**Semantic Information** is  
**outer-directed**  
toward the competition

**b) Advertising Experience:**

**Esthetic Information**  
**inner-directed**  
toward the self

**c) Branding Moments:**

**Peak Moments** occur at the boundary between the outer and inner worlds



**Exhibit 5 Defining Branding Moments**

## BRANDING MOMENTS

**Branding moments in an advertisement are those special, ownable moments when a brand's positioning is expressed in a fresh new way.**

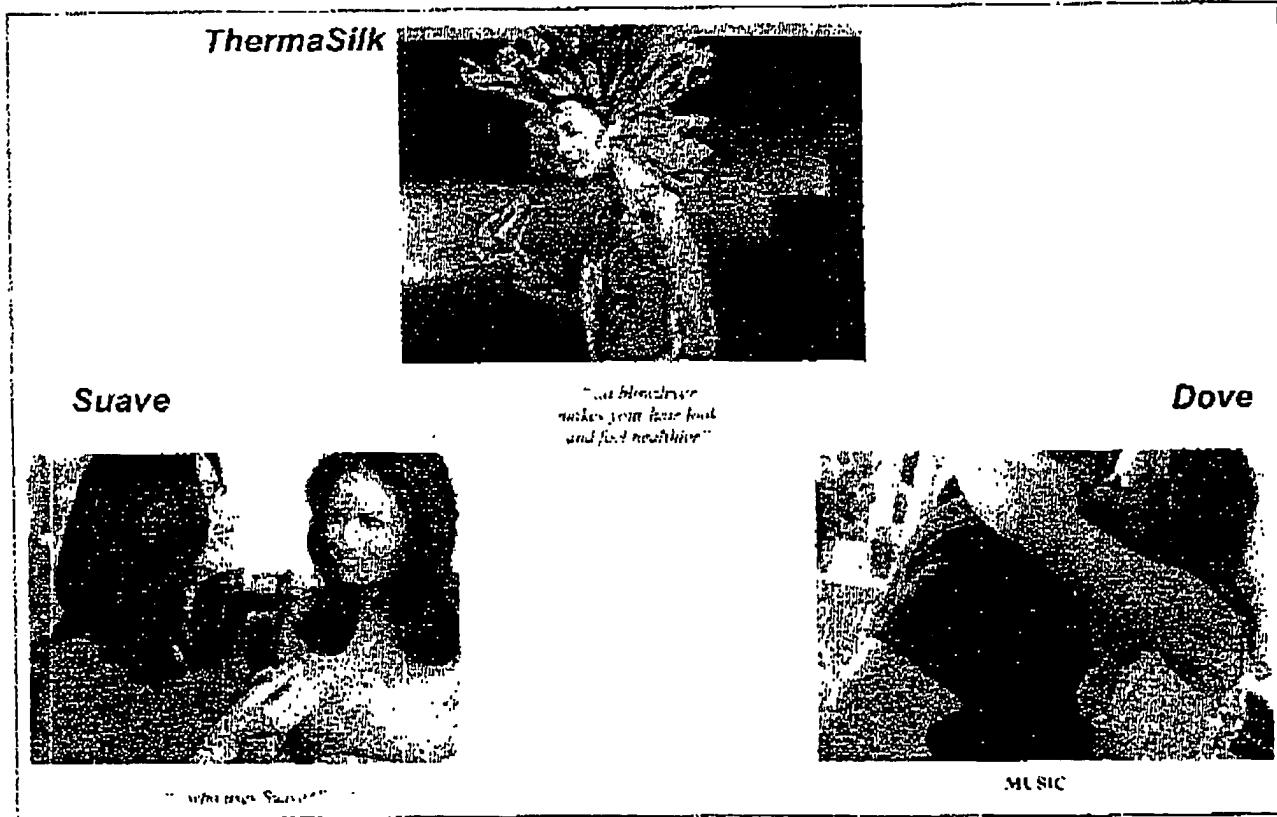
new way. Branding moments capture both the essence (positioning) and drama of the brand—hence, brand images have simultaneous semantic and esthetic content (image).

In order to develop a theory of branding moments it is first necessary to have a way of identifying them. The two nonverbal, moment-by-moment techniques described here provide us with a method for doing so. We suggest that branding moments can be identified from the convergence of

these two measurement approaches. As we have seen, advertising moments that generate a peak for *both* the Picture Sort® and the brain-wave Engagement Index represent less than 10 percent of the total content of television commercials—and, in fact, such moments do not appear to occur in all commercials. We suggest that branding moments can be found at those intersections. Three examples will be used to illustrate the point, as shown in Exhibit 6.

**Example 1**

The first example comes from the introductory advertising for ThermaSilk shampoo. The reason-for-being for this new product was that, by using a revolutionary formula, this shampoo would actually transform something that is normally *bad* for your hair—the damaging heat from blow dryers—into something that is actually *good* for the health of your hair. From pre-testing measures, this television commercial was very attention getting and motivating and was subsequently very successful in launching this new product. But only one moment from the advertisement, the one shown in Exhibit 6, generated a peak in both the Picture Sorts® and brain-wave measurements. It's a visual from the "thermal world" showing a



**Exhibit 6 Examples of Branding Moments**

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woman using a blow dryer on her hair, with the copy "a blow dryer makes your hair look and feel healthier." This moment, more than any other in the advertising, summed up the strategic selling proposition of the brand. Moreover, the use of unusual "thermalized" imagery was the key esthetic element of the campaign. In fact, when the campaign awareness was tracked in-market at the end of the first year, using a brand-blinded, recognition-based approach to measurement, the thermalized imagery was determined to be an important cue for consumers to use in correctly identifying ThermoSilk as the brand being advertised.

**Example 2**

The second example is from Suave<sup>\*</sup> shampoo advertising, another campaign with proven market sales effectiveness. Suave is a value brand with a strategy of convincing consumers that, in terms of the product benefits that are really important to them, all products are pretty much the same so that there is no need to pay a higher price for premium brands. The executional concept is to show two women with great-looking hair, one who uses Suave and one who uses a premium brand, and have the consumer audience engage in the "interactive game" of figuring out "who uses Suave?" The point is, "if you can't tell the difference, why pay more?" As you can see, this particular visual, a side-by-side shot of two women with great-looking hair that you almost want to touch, and the challenge copy combined execution and strategy into a single gestalt. A branding moment? This is the *only* moment in the commercial where the Picture Sort<sup>\*</sup> and brain waves peaked at the same time.

**Example 3**

The last example comes from a revised version of the Dove<sup>\*</sup> deodorant execution shown earlier. Based on diagnostic find-

ings from research on the original advertising, the execution was revised to provide a better set-up at the beginning of the advertising: the Dove parent brand was identified more clearly up front and the importance of having soft skin even under your arms was established before introducing the new product. With these changes, an interesting thing happened. The hug shot, which followed these changes, was again a Picture Sorts<sup>\*</sup> peak but was also now a brain-wave peak. For the reasons given above this was clearly a key visual in the advertising but apparently, with the new set-up, the significance of the raised arms cueing the deodorant category and linking to the strategic benefit also came into focus for the audience. Importantly, the "Dove hug" has the look and feel of a long-term "ownable" advertising equity, i.e., a branding moment.

There are two important points to be made from the last example. First, there is no copy synchronized with this visual, only music—so our concept of branding moments is more than moments in a commercial where strategic copy is synchronized with arresting visuals. Second, branding moments do not stand alone or apart from the other elements in the commercial. The Dove example illustrates this point.

**CONCLUSION**

Presently, branding moments represent merely a hypothetical construct that emerges out of the empirical finding that Picture Sorts<sup>\*</sup> and brain waves appear to be measuring two very different types of information processing by the mind of a consumer engaged in watching television commercials. One type of processing, of esthetic content, is measured by the Picture Sorts<sup>\*</sup>, while the other type of processing, of semantic content, is measured in particular by EEC response to brain activi-

ty. These two types of processing appear to be related to two fundamental marketing processes—building a brand image and positioning a brand in the marketplace.

In only a very small percentage of moments, both measures of information-processing peak simultaneously—a fact suggesting that these moments are somehow special. Proving the existence of branding moments might, therefore, provide us with a theoretical mechanism for understanding the *long-term*, brand-building effects of advertising. **JAR**

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